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NOTICE OF EX PARTE COMMUNICATION

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To Whom It May Concern:

On December 12, 2005, we met with Narda Jones and Mark Seifert of the Wireline Competition Bureau to elaborate on the performance measurement concepts we proposed in our October 17, 2005 comment, filed in the above mentioned dockets. As a result of those discussions, we would like to submit additional comments suggesting some specific outcome measures the Commission could implement in the near term, as well as some additional public benefit measures that may require additional research before they can be implemented.

We believe that our suggested measures reflect a concept of the public interest that should receive support from a broad spectrum of policymakers who genuinely seek to ensure that universal service programs promote affordable access to communications services. Therefore, our proposed measures should be politically viable as well as practical and economically sound.

The fundamental source of our short-term vs. long-term distinction is that Congress directed the FCC to develop universal service programs that would promote affordable access to communications services for a variety of customers. However, affordable access should not be an end in itself. The ultimate public benefits created by affordable access are the economic, social, educational, and health outcomes that occur because low-income consumers, rural consumers, educational institutions, and health care providers have affordable access to communications technology. Congress presumably enacted universal service legislation in the belief that affordable access would create those public benefits. Logically, affordable access cannot cause public benefits to occur unless it results in an increase in subscription

or connectivity, above the levels that would exist in the absence of the universal service programs. Performance measures, therefore, should be based on the following causal chain:

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1. Universal service programs cause affordable access
2. Affordable access causes an increase in subscription or connectivity
3. Increased subscription or connectivity improves economic, social, educational, and health outcomes.

Effective performance measures for universal service programs should address all three links in this chain. Some measures should demonstrate how the programs have affected the availability and affordability of service. Other measures should show how the programs have affected subscription or connectivity. Finally, a third set of measures should examine the extent to which the programs have affected the ultimate economic, social, educational, health, and cultural outcomes. Our initial comment recommended measures of all types.

Because data on availability, affordability, and subscription are likely more readily available, these measures could be developed first and tracked annually. To complement this tracking of intermediate outcomes, the FCC should develop an initiative to assess the longer-term effects of universal service programs on the broader public benefits that the programs are supposed to produce.

I. Affordable Access

The plain language of the Telecommunications Act implies that "affordable access" is the primary goal of universal service programs. Measures that focus on affordable access should receive broad support among policymakers who are genuinely interested in ensuring that universal service programs promote affordable access to communications services.

A. Statutory Language

The first principle enunciated in the Act is that "Quality services should be available at just, reasonable, and affordable rates."[1] "Just and reasonable" rates are not, of course, unique to universal service programs; rates produced by a competitive market or by cost-based regulation might be considered "just and reasonable." But such rates may not be considered "affordable" for low-income subscribers or residents of high-cost areas. Consequently, the key concepts that establish goals specific to universal service programs are availability and affordability.

Consumers in rural and high cost areas are to have "access" to telecommunications and information services that are "reasonably comparable to those services provided

[1] §254 (b) (1).

in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas."[2]

Direct subsidy programs aim to reduce the cost of local telephone service. In addition, the Act requires that interexchange carriers must charge rates in rural and high cost areas that are "no higher than" the rates they charge in urban areas.[3] Schools, libraries, and health care facilities are to have "access" to advanced telecommunications services.[4] Rates for elementary schools, secondary schools, and libraries are to be "less than" the amounts other parties pay for similar services, with federal and state regulators to determine what discount is required to ensure "affordable access."[5] Rates for rural health care providers must be "reasonably comparable" to rates charged for similar services in urban areas of the state.[6]

This language implies that performance measures should answer two questions:

(1) Do the targeted customers have access to the desired services?

(2) Are the prices of these services "affordable" or "reasonably comparable" for these customers?

B. A Caveat on Interpretation

Establishing specific performance measures for universal service programs necessarily entails judgments about the specific meaning of terms in the Telecommunications Act such as "affordable," "accessible," and "reasonably comparable." For states, corporations, rural co-ops, schools, and other constituencies, millions of dollars (or perhaps even hundreds of millions of dollars) are at stake in the definition of these terms. As a result, many interested parties will no doubt argue for whatever definitions advance their interests.

For the purpose of proposing performance measures, we will suggest definitions of these terms as well. However, our goal is not to argue for a specific definition in order to advance a particular agenda. Rather, we suggest some definitions that we believe many people would regard as reasonable and reflecting the public interest, in order to have a starting point for developing sensible performance measures.

Similarly, various parties have an interest in ensuring that specific types of services are eligible for universal service subsidies. The mix of subsidized services may change in the future.[7] We focus principally on performance measures for the

[2] §254 (b) (3).
[3] §254 (g).
[4] §254 (b) (6).
[5] §254 (h) (1) (B).
[6] §254 (h) (1) (A).
[7] §254 (c).

services that currently receive universal service subsidies. We propose measures for the services currently subsidized, because those are the ones for which it is most critical to develop performance measures at this time.

Even if the FCC decides that other objectives or goals are reasonable, we believe the Commission can employ the principles underlying our measures to develop workable measures that correspond to the definitions and goals the Commission selects. Similarly, even if the FCC decides to change the mix of subsidized services, we believe that the general principles illustrated by our proposals can be employed to develop measures for other services that are not currently subsidized.

C. Outcome Measures

1. Access

Researchers often try to measure the contribution of universal service programs to access by measuring their contribution to subscribership. However, access and subscribership are not the same thing. Subscribership clearly requires access, but one may have access to a service and still choose not to subscribe. If the access is affordable, then the policy goal of affordable access has been achieved even if some or many choose not to subscribe.[8] If subscribership seems low, then one should directly measure availability of service before reaching a conclusion on access.

a. Residential phone service

Very high subscribership rates imply that telephone service is available virtually everywhere in the United States. Exceptions may be certain high-cost and rural areas, if the requisite infrastructure is not in place. One can infer a high degree of access from high subscribership rates, but the converse is not true. Households with affordable access might decline to subscribe because their peculiar situation or norms in the local community lead them to place a very low value on telephone service.[9] Hence, if subscribership seems low, the principal measure of access should be the number of households that have phone service available in some form. That should include conventional wireline phone service, cable telephony, wireless, or a broadband connection capable of supporting Voice over Internet Protocol.

b. Schools and libraries

An access measure for schools and libraries should assess whether the Internet services of interest are available to schools and libraries. It is difficult to believe that many schools or libraries lack access to dialup Internet service; the only ones lacking access would be those that also lack access to telephone service. For broadband service, one source of data on access might be the periodic FCC surveys on availability of high-speed Internet service by zip code. Tracking the number and percent of schools and libraries located in zip codes with high-speed Internet service would provide one (albeit imperfect) measure of high-speed access.

An alternative measure of broadband availability to schools would be the number and percent of students (and population, for libraries) in zip codes where FCC surveys indicate that high-speed Internet service is available. An increase in this number over time would suggest that access is improving. If the FCC alters its way

[8] For more elaboration on this point, see the October 17, 2005 Mercatus Comment: 7, available at http://www.mercatus.org/pdf/materials/1417.pdf .
[9] See Mercatus Comment (2005): 7.

of measuring broadband availability in the future, then this measure could be updated to reflect that change.

c. Rural health facilities

Conceptually, there is no reason why similar types of access measures could not be developed for rural health care facilities. We are not familiar with data on rural health car facilities, and so we do not know whether existing data from the Universal Service Administrative Corp. or the Department of Health and Human Services would be sufficient for development of such measures. We suspect the most accurate measure of access would focus on the number of patients or number of people in communities served by health care facilities that have high-speed Internet access available, rather than the number of facilities.

2. Affordability

a. Residential phone service

The first task in developing affordability measures is to determine what constitutes affordability. An intuitively appealing definition of affordability is that the price as a percent of real consumption expenditures is below some target level. "Real" expenditures should be adjusted for local differences in the cost of living. For consumers purchasing telephone service, the target level might be the percentage of income that a middle-income family spends on telephone service. Statistics on telephone service expenditures are available by income level from the Bureau of Labor Statistics' survey on household consumption expenditures and the PNR Bill Harvesting Survey.[10] Statistics on household income are available from the U.S. Census Bureau.

To calculate this measure, a reasonable package of telephone service might be the typical or least expensive combination of unlimited local plus the typical or average amount of long-distance service. In many case this would likely be local wireline service plus long-distance, but in some cases a wireless package might be the lower-cost option.

Affordability and universal service discussions have traditionally focused on local service. There are, however, several good reasons to include the cost of long-distance service in the outcome measure. First, the Telecommunications Act explicitly provides for implicit subsidies for long-distance service in the form of rate averaging.[11] Second, the cost of long-distance service affects households' decisions to join the phone network. Surveys of phoneless low-income households reveal that

[10] See, e.g., calculations in Robert W. Crandall and Leonard Waverman, *Who Pays for Universal Service?* (Washington, DC: Brookings, 2000): 38; 47-49.
[11] §254 (g).

the cost of long-distance service is one significant barrier to telephone subscription, and econometric studies find that the subscription decision is sensitive to the cost of long-distance service.[12] One cannot determine whether phone service is "affordable" without knowing the price of long-distance service.

One of the most comprehensive studies of universal service policy found that for the median household, about 2.5 percent of consumption expenditures were for telephone service, and 1.1 percent of consumption expenditures were for local telephone service.[13] If the affordability outcome measure includes long-distance service, then, the measure would be the number and percentage of households that devoted 2.5 percent or less of consumption expenditures to local and long-distance service. An increase in the percentage and number means that more households have "affordable" telephone service.

b. Schools and libraries

A similar affordability concept might be developed for schools and libraries. To devise an affordability measure, one could count the number of students enrolled or library population served by institutions that receive the full e-rate discounts that they are supposed to receive. Expressing these totals as a percentage of all students (for schools) or population (for libraries) would provide additional information about the percentage of the target population that receives the service at an "affordable" price. Separate measures could also be calculated for subsets, such as schools in various income categories.

Defining the affordability measure in this way, however, carries a significant danger. The number of students or population served at institutions receiving the discounts is actually just a transformed output measure. It tells how many people are served by institutions receiving the discounts, but does not necessarily provide a clear indication of affordability, in the same way that our proposed measure of affordability for telephone service does.

A more rigorous and useful affordability measure would involve three steps similar to those suggested for residential telephone service:

1. Define an appropriate or acceptable percent of expenditure on advanced services for schools and libraries,

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[12] Milton L. Mueller and Jorge Reina Schement, "Universal Service from the Bottom Up: A Study of Telephone Penetration in Camden, New Jersey," *The Information Society* 12 (1996): 287; John B. Horrigan and Lodis Rhodes, *The Evolution of Universal Service in Texas* (Sept. 1995), available at www.apt.org/policy/lbjbrief.html; Jerry Hausman, Timothy Tardiff, and Alexander Belinfante, "The Effects of the Breakup of AT&T on Telephone Penetration Rates in the United States," *American Economic Review* 83 (May 1993), pp. 182-83.

[13] Crandall and Waverman (2000): 38.

2. Measure the population served by institutions that pay an amount equal to or less than that percentage, and
3. Report the figures both as raw numbers of people and as a percentage of the total potential population.

Such a measure would help ascertain whether schools and libraries are in fact purchasing advanced service at affordable prices.

c. Rural health facilities

Finally, the legislative definition of "affordability" for rural health care facilities appears to mean that they pay prices comparable to those paid by similar facilities in urban areas. Given this definition, one could estimate how many patients were served by facilities receiving these discounts, both as an absolute number and as a percentage of the potential total in rural areas. As with the first proposed schools and libraries measure, this is really a transformed output measure rather than a true outcome measure. Given the statutory definition of the appropriate price, however, it may be the best one can do to measure affordability for rural health facilities.

3. Affordable access

One might also combine some of the access and affordability measures to develop combined measures of "affordable access." For example, multiplying the percentage of customers with access to the service by the percentage of these for whom the service is affordable shows the percentage of customers with affordable access.

D. Causation

To evaluate the success of universal service programs, it is not enough that the FCC measure the intermediate outcomes. Accurate evaluation requires a determination of *how much* of the intermediate outcome was actually caused by the program. A broad economic recovery, for example, might increase the affordability of telephone service for low-income people by increasing their incomes. Conversely, a recession might decrease affordability by reducing incomes. In either case, the observed change in affordability should be attributed to changing economic conditions, not to the existence of the universal service program. Similarly, a local economic boom created when a rural area becomes an "outer suburb," retirement haven, or tourist destination might increase the availability or affordability of telecommunications services, but this improvement was not caused by universal service programs.

The most accurate way of determining causality is to compare the actual outcome to the outcome that would have occurred in the absence of the program. In some cases, this comparison can be accomplished by examining the outcome measure before and after the program is adopted, or by comparing outcome measures across similar places that have different levels of program funding. These relatively simple comparisons, however, are not always possible or illuminating—especially if a program is nearly universal or has been in existence for a long time. Careful counterfactual analysis, often based on econometrics or on careful selection of "treatment" and "control" groups, may be necessary.

FCC economists and outside researchers often conduct this type of analysis, and it is often an input into regulatory and policy decisions.[14] Counterfactual analysis is also a well-understood method for assessing program effectiveness. It is a critical component of valid performance measures.

1. Access

[14] For example, the debate over public policy toward cable television has been heavily informed by FCC statistics, and FCC and GAO econometric analyses, of the effects of wireline cable competition on the price of cable service. See, e.g., FCC *Cable Price Report* 2005; U.S. Government Accountability Office, *Telecommunications: Direct Broadcast Satellite Subscribership Has Grown Rapidly, but Varies Across Different Types of Markets*, Report # GAO-05-257 (April 2005): 31.

Determining the effects of universal service programs on availability of service may require fairly sophisticated analysis. For each program, the challenge is ascertaining whether infrastructure to provide the service would be available in the absence of the subsidy. Ascertaining whether infrastructure would have been available in the absence of the program is not the same thing as ascertaining whether the infrastructure that actually exists would have been available. In some rural areas, for example, wireline telephone service might not exist in the absence of subsidies, but a less expensive wireless solution might have been deployed instead.

2. Affordability

One can roughly gauge the effect of universal service programs on affordability by comparing the effects of subsidized and unsubsidized prices on the affordability measure.

For example, one can gauge the effect of universal service programs on affordability by calculating how the subsidized price affects the affordability outcome measure. Our suggested outcome measure for low-income programs is the number of low-income households that pay less than a specified percentage of their real income for telephone service. One could calculate what percentage of income these households would have paid in the absence of the low-income subsidies, and compare this percentage to the target and the actual percentage to determine how many additional households received "affordable" service as a result of the subsidies. These calculations could be performed using national averages, state averages, averages for various populations, or even more granular figures, depending on the level of detail desired.

A causation analysis for the other universal service programs would proceed in similar fashion:

1. Calculate the price(s) that would have been paid in the absence of subsidies. This may be as simple as adjusting the price by the amount of the subsidy. If the subsidy also has documented effects on other variables, such as costs, these should also be taken into account.
2. Calculate the number of households or other entities for whom the service would no longer be considered "affordable" if they had to pay the unsubsidized price.

II. Subscribership and Connectivity

A. Performance measures

Raw statistics on telephone subscribership are not difficult to find; indeed, the FCC gathers and calculates many of them.

For schools, the most useful outcome measures to track regarding connectivity are likely the extent of broadband Internet connection and the percent of classrooms with Internet access. In 2002, 99 percent of public schools were connected to the Internet, 94 percent of these had broadband connections, and 92 percent of instructional rooms had Internet access.[15]

The National Center for Education statistics has gathered these data from public schools in the past. Extending the measure to cover private schools will most likely depend on the current state of NCES' ability to survey private schools. NCES also breaks down the data by school size, locale, percent minority, and percent eligible for free or reduced-price lunch.[16] To the extent that the Commission is interested in connectivity in schools with various demographic characteristics, the NCES data should facilitate such tracking.

Counting schools or classrooms with connectivity does not necessarily track the number of students affected. An alternative measure would start with the NCES data on school connectivity and multiply by student populations to estimate the number of students in schools with broadband connections or a high percentage of classrooms connected to the Internet.

B. Causality

A somewhat more challenging question involves determining what kind of changes in subscribership or connectivity the universal service programs have caused. Fortunately, scholarly researchers have already developed statistical methods and models to test and quantify causality of this type. This research is cited in our original comment; FCC staff would only need to replicate and update these studies periodically with newer data.

III. Broader Public Benefits

The outcomes of a program are the intended public benefits produced, or harms to the public avoided, as a result of the program. Congress established access and affordability as the statutory goals of universal service programs. The ultimate goals, however, are the economic, social, educational, health, and cultural outcomes that affordable access to communications services is assumed to produce. Although the FCC cannot change the statutory goals, the FCC should, as the expert agency

[15] Anne Kleiner and Laurie Lewis, *Internet Access in Public Schools and Classrooms, 1994-2002* (Washington: National Center for Education Statistics, 2003): 3-5.
[16] Kleiner and Lewis (2003).

that designed the programs, bear responsibility for assessing whether access and affordability do indeed produce the public benefits legislators hope they will produce.

To effectively identify the public benefits produced by universal service programs, the FCC should pursue rigorous program assessment to answer questions such as:

1. What benefits does telephone subscribership actually produce for low-income households?
2. What benefits does telephone subscribership actually produce for rural households?
3. How does Internet connectivity in schools affect student achievement?
4. How does connection to high-speed communications affect health outcomes produced by rural health facilities? How does connection to high-speed communications affect the cost of maintaining a healthy population in rural communities?

Once the FCC has answers to these questions, grounded in solid research, it will then be in a position to assess how the universal service programs have affected the ultimate public benefits.

We do not mean to imply that the FCC should bear sole responsibility for performing these evaluations. An evaluation of the benefits of Internet access in schools, for example, would likely require expertise and cooperation from the Department of Education. Similarly, an evaluation of the effects of communications technology on health outcomes would likely require expertise and cooperation from the Department of Health and Human Services. Nevertheless, the FCC clearly has the greatest stake in understanding the effects of universal service programs. Therefore, it is appropriate that the FCC take the lead in initiating these program evaluations.

We hope this letter clarifies the ways in which the FCC could act on the recommendations we made in our comments submitted on October 17, 2005.

Sincerely,

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